Description to reference of the patent request for industrial invention

from the title:

PROPULSION SYSTEM FOR SCUBA DIVER

## DESCRIPTION

### BACKGROUND OF THE INVENTION

The expedient validly supported by a special usable slinging from scuba divers , deep-sea divers or simple swimmers, the all one advantageously fed by a sophisticated system of rechargeable batteries, inserted inside several united watertight containers between them by interspaces in rubber or other suitable material, its regards an innovative electric propulsion means. As we know, the greatest difficulty for who does operate underwater is the shifting. Such difficulty, in certain particular conditions, exponentially increases, putting the staffs more qualified resistance to hard test, what even if been adequately about it, can run heavy risks putting its safety to risk. The innovative structure, it will allow to all specialized operators to move without this problems underwater, even if the immersions will be made in depth and prolonged for long time periods. Another very important characteristic of the system they are the reduced ones it blocks, what they will allow to move and be operated in complete freedom and any condition.

### BACKGROUND ART

To the purpose of the present patent request, turns out superfluous describing the various kinds of underwater propulsion at present used, as their working is well-known from all the technicians of the sector and constitutes well known art and however they do not allow to solve the shown problem. The principal purpose of the present invention is ,to remove the inconveniences mentioned above,and supplied it, to all the swimmer or professional diver,

whit a valid and technologically propulsive system, advanced and safe to use, system able to facilitate the normal moviment, also in extreme condition as the prolonged underwater permanence or the strong depths.To this result its reached, in conformity to the invention, adopting the technical solution to realize a system having the characteristics described in the independent claims. Other characteristics of the present invention, they are object of the dependent claims.

DISCLOSURE OF INVENTION

The advantages that are derived from the present invention consist essentially in the fact that all of the divers, deep-sea divers, or alone simple fascinated, they can validly to use the system object of the present patent to carry out movements in complete safety while they are in immersion, having so them to disposition an accessory whit reduced dimensions and very efficient and versatile. These and further advantages and features of the present invention, will be more and better included, from every technician of the branch from the description that follows and with the help of the annexed drawings, data what exemplification puts into practice of the found,but from not to consider itself in limiteted sense, in which:

- **The fig 1**, show the system of propulsion to the entire one with all its accessories whom it is composed and moderately put on from the user with in sequence: the two hydro-jet (1C, 1D) of small dimensions; the slinging (2B) correctly applied with in obviousness the holes strengthened (5H, 5I, 5L) still free and ready for advantageously to to be used; the electrician feeding system (6) composed from varied containers containing batteries united between them by gaps in rubber or other fit material,detailed described in the following figure of drawing; the manual control developed from a watertight switch (7) positioned in the palm of the hand to the inside of the underwater wet suit, to action the switch on/off to the varied electric equipment.
- **The fig. 2**, show always the system of propulsion to the entire one with all

its accessories of whom is composed and moderately put on from the user, where were dismissed the two side hydro-jet of small dimensions (not visible in figure), validly replaced with one of greater dimensions placed centrally. Such solution will be able to to be adopted in the case in which, for reasons of obstacle, other specific configurations are dissuaded. Also in this figure note themselves in sequence:

The slinging (2C) correctly applied with in obviousness the holes strengthened (5M, 5N, 50, 5P) ready for advantageously to be used; the electric feeding system (6B) composed from varied containers containing traditional batteries or rechargeable, united between them by means of gaps in rubber or other fit material (detailed described in the successive figures of drawing); the manual watertight switch developed (7B) positioned in the palm of the hand inside of the wet-suit, for to action the switch on/off to the varied electric equipment.

**The fig. 3**, show a part of the special system of propulsion with in obviousness the special slinging ,whom its locked around the waist of the user and, the holes strengthened (5, 5B, 5C, 5D,5E, 5F, 5G) their actions is to harpoon compactly the two special hydro-jet.**fig. 4** and other useful objects for the immersions. It is necessary to state that the system of stalled represented in figure with the holes strengthened (5, 5B, 5C, 5D, 5E, 5F, 5G) where come introduced the relevant bolts, it is alone of example, seen that advantageously can be used other innumerable systems normally in use,without to compromise it the correct operation.

**The fig. 5**, is represented an applicable changing to the button (7C), that in some case it can equipped of a strap belt action (8) to stop it strongly to the palm of the hand, to use mainly when the diver does not put on an underwater wet suit .

**The Fig. 6** represents instead the system of feeding (6C) composed from varied watertight containers, all containing traditional or rechargeable batteries , united between them by means of gaps in rubber or other fit

material, where were applied, thanks to of the special slots described detailed in the successive figures, other three small watertight containers (9, 9B, 9C) also they containing a traditional battery or rechargeable. Such addition, when the space agrees it, serves to develop and to increase the autonomy of the same system.

**The fig.7** show instead the small hidro-jet (1F) entire of the electric cables of whom is provided.

**The Fig. 8** shows a box of derivation to hold watertight (10) in whose inside, come connected the hollow varieties of the circuit of feeding and switch, complete of the relevant holes of entrance(11,11B,11C, 11D, 11E, 11F) all equipped of the respective plugs in rubber that avoid to the water to penetrate inside. In the superior part it is noted the lid (12) first still of to be applied and the ring of capacity in rubber (13).

**The fig.9**, represents in detail the entire and special system of feeding of the parts that its composed with in sequence:
the small stoppers (14, 14B, 14C) to introduce by pressure on the watertight containers (9D, 9E, 9F, 9G, 9H, 9I, 9L) all of one advantageously furnished by the o-rings of capacity (15, 15B, 15C); the electric cable of connection (16, 16B, 16C, 16D, 16E, 16F, 16G, 16H,16I); the two couplings (17, 18);the connection made of rubber or other fit material (19, 19B, 19C, 19D, 19E, 19F, 19G, 19H); the two couplings, with profile to "V" (20, 20B) (optional); the traditional batteries or rechargeable (21, 21B, 2IC). -

**The fig.10** represents in detail a watertight container (9M) in whose inside come positioned the relevant traditional batteries or rechargeable either with in sequence: the lid (14D) to introduce by pressure on the container (9M);. the o-ring of capacity in rubber (15D) or other technical material fit; the two holes of connection (22, 22B) to hold watertight; the two symbols of polarity (23, 23B) useful for the composition;(24) special underwater electrical cable with the relevant plug of capacity (25) in rubber or other technical material fit; the two leaders (26, 26B) actions to connect the relevant gaps of

connection (19I) in rubber or other technical material fit.

**The Fig. 11**, show a gap of connection (19L) in rubber or other technical material fit, on that a special slide is assembled (20C) with profile to "V" (optional), action to connect eventual supplementary accessories.

**The Fig.12** show in detail the profile offsetted (27, 27B) places in the inferior part of all of the watertight containers (9N, 90); Such profiles, come used when want to connect themselves between them (9N, 90) with the purpose of to make different configurations of the device of feeding.

**The Fig. 13**, show with aerial sight, the inferior part of a watertight container (9P) where note themselves the profiles offsetted (27C); the two leaders (26C, 26D); the two gaps of connection (19M, 19N) in rubber or other technical material fit of whom a (19N) introduced correctly each other (19M) outside seat.

Reduced to its essential structure and with reference to the figures of the annexed drawings, of an innovative means of propulsion, validly sustained from a special slinging, useable from divers,deep-sea divers or simple fascinated, everything advantageously feeding from a sophisticated system of batteries, traditional or rechargeable either introduced to the inside of varied watertight containers united between them by means of gaps in rubber or other technical material.

## BRIEF DESCRIPTION OF DRAWINGS

In conformity of the present invention its composed by:

-Means act to move a diver underwater by the small electric hydro-jet (1, 1B, 1C, 1D, 1E) validly sustained from an slinging (2, 2B, 2C) that it is hooked arround of the waist of the user, and feeding by a system including a series of watertight cylinders (9, 9B, 9C, 9D, 9E, 9F, 90, 9H, 91, 9L, 9M, 9N, 90, 9P) all containing a rechargeable batteries or cell accumulator (21, 21B, 2IC);

- means to compose any type of configuration of the innovative system whit the slinging (6, 6B, 6C), by the gaps of connection (19, 19B, 19C, 19D,

19E, 19F, 190, 19H, 191, 19L, 19M, 19N) in rubber or other tecnical material fit offsetted (26, 26B, 26C, 26D, 27, 27B, 27C) places to the basic of the watertight cylinders (9, 9B, 9C, 9D, 9E, 9F, 90, 9H, 91, 9L, 9M, 9N, 90, 9P);

- means to connect and to hollow varieties of the electrical circuit of connection, swich and feeding to the inside of a special watertight box (10), complete of the relevant holes of entrance (11, 11B, 11C, 11D, 11E, 11F) validly endowed by the respective plugs in rubber (25) that hinder to the water to filter inside;
- means to command all of the system by the watertight button (7, 7B) if necessary integrated with a strap (8) action to stop them strongly in the palm of the hand, to use when the diver, for varied motive, does not put on an underwater overalls;
- means to connect at the special slinging(2,2B,2C) accessories, by of the holes strengthened (5, 5B, 5C, 5D, 5E, 5F, 5G, 5H, 5I,5L, 5M, 5N, 50, 5P) equipped of the relevant bolts to equipment;
- means to provide the gaps of connection (19, 19B, 19C, 19D, 19E, 19F, 19G, 19H, 19I, 19L, 19M, 19N) in rubber or other technical material fit, with a special slide (20, 20B, 20C) with profile to "V" for to rig the supplementary accessories.

Advantageously, the special system of propulsion is easily representable in varied solutions of utilization allowing to all of the divers,deep-sea divers, simple fascinated, to use for work or for simple amusement in entire safety.

Advantageously, the special slinging (2, 2B, 2C) is in a position to block varied types of accessories like the small hidro-jet (1, 1B, 1C, 1D, 1E, IF) by the holes strengthened (5, 5B, 5C, 5D, 5E, 5F, 5G, 5H, 51, 5L, 5M,5N, 50, 5P) linked to the relevant bolts or, using other systems of riging, without to endanger the correct operation.

Advantageously, the special propulsive system, will be able to provided a watertight button (7, 7B)actions to command with only an alone hand, the

swich on/off all of the system.

Advantageously, the electrical power of the battery (6, 6B, 6C) will be able to be used to feed all of the system object of the patent or for other like purposes, all of this on account of to the versatility of the building project.

Advantageously, the system object of the patent, arranges of special trickiness technical actions to avoid that the water penetrate in the electric or electronic systems to compromise irretrievable the correct operation.

Advantageously, the special system of propulsion,will be able to be built with the most disparate materials today in commerce. It will be in fact possible to use the common plastic matters, the aluminum, the synthetic resins-glass, the carbon, all the leagues composite, even to use varied metals like the iron, the steel, the brass and their everything been derived. In practice the details of execution are able however to vary in equivalent manner in the shape, dimensions, disposition of the elements, nature of the materials employed, without moreover to go out from the field of the idea of solution adopted and so staying in the limits of the protection reconciled from the present patent for industrial invention.